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June 1996

ENVIRONMENTAL ASSESSMENT
BLM/EK/PL-96/015

MIDAS JOINT VENTURE
MIDAS PROJECT

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Midas Joint Venture: Midas Project

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TABLE OF CONTENTS

Page

1. INTRODUCTION/PURPOSE AND NEED 1
   1.1. Introduction 1
   1.2. Purpose and Need 1
   1.3. Issues 3
   1.4. Land Use Plan Conformance Statement 3

2. PROPOSED ACTION AND ALTERNATIVE 4
   2.1. Proposed Action 4
      2.1.1. Location 4
      2.1.2. Road Construction 4
      2.1.3. Exploration Holes 7
      2.1.4. Surface Water Control 7
      2.1.5. Surface Disturbance 7
      2.1.6. Water Use 7
      2.1.7. Work Force 8
      2.1.8. Reclamation 8
   2.2. Alternatives Eliminated From Consideration 8
   2.3. No-Action Alternative 8

3. AFFECTED ENVIRONMENT 10
   3.1. Proposed Action 10
      3.1.1. Soils 12
      3.1.2. Air Quality 13
      3.1.3. Water Resources 13
      3.1.4. Wetlands/Riparian Zones 14
      3.1.5. Biological Resources 14
         3.1.5.1. Vegetation 14
         3.1.5.2. Threatened, Endangered, and Sensitive Plant Species 15
         3.1.5.3. Wildlife Resources 15
         3.1.5.4. Threatened, Endangered, and Sensitive Wildlife Species 15
      3.1.6. Cultural Resources 15
         3.1.6.1. Prehistory and History 15
         3.1.6.2. Cultural Resources Inventory 16
      3.1.7. Native American Religious Concerns 17
      3.1.8. Visual Resources 17

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P.O. Box 25047
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Page

3.1.9. Noise 18
3.1.10. Range Resources 18
3.1.11. Socioeconomics 18
3.2. No-Action Alternative 19

4. ENVIRONMENTAL CONSEQUENCES 20
4.1. Proposed Action 20
4.1.1. Soils 20
4.1.2. Air Quality 20
4.1.3. Water Resources 20
4.1.4. Wetlands/Riparian Zones 21
4.1.5. Biological Resources 21
4.1.5.1. Vegetation 21
4.1.5.2. Threatened, Endangered, and Sensitive Plant Species 21
4.1.5.3. Wildlife Resources 21
4.1.5.4. Threatened, Endangered, and Sensitive Wildlife Species 22
4.1.6. Cultural Resources 22
4.1.7. Native American Religious Concerns 22
4.1.8. Visual Resources 22
4.1.9. Noise 23
4.1.10. Range Resources 23
4.1.11. Socioeconomics 23
4.2. No-Action Alternative 23
4.3. Cumulative Impacts 24
4.4. Monitoring 24

5. CONSULTATION AND COORDINATION 25
5.1. List of Preparers 25
5.2. Persons, Groups and Agencies Consulted 25

6. REFERENCES 27

LIST OF FIGURES

Page

Figure 1: Location Map 2
Figure 2: Project Areas and Regional Setting 5

LIST OF TABLES

Page

Table 1: Proposed Action Areas of Disturbance 6
Table 2: Soil Series Within Area of Project 13

LIST OF APPENDICES

Appendix A - Plant Species Observed in the Area of the Midas Project
Appendix B - Correspondence with the Nevada Natural Heritage Program

CHAPTER 1. INTRODUCTION/PURPOSE AND NEED

1.1. Introduction

Midas Joint Venture (MJV) proposes to conduct mineral exploration activities in northeastern Nevada from 1996 to 1997 under the Midas Project Plan of Operations (POO) submitted in February, 1996 and revised in May, 1996. Exploration activities would consist of road construction and exploration drilling and sampling. This proposal would result in an estimated maximum area of 43.04 acres of surface disturbance. The Midas Project (Project) is located on patented land owned or leased by MJV and unpatented federal lode mining claims on public lands administered by the Bureau of Land Management's (BLM's) Elko District Office. Exploration activities would be conducted on three (3) contiguous Project areas and one (1) discontinuous Project area situated within an area approximately 2.5 miles north and east of the town of Midas, and located about 60 miles northwest of the City of Elko in Elko County, Nevada (Figure 1).

The proposed Project is part of an ongoing exploration operation. Since 1994, MJV has conducted exploration drilling activities on the property under three (3) Notices of Intent (NOI) (N16-94-10N, N16-95-12N and N16-95-13N). The exploration activities conducted under these notice level operations included: (a) the construction of approximately 31,500 feet of new drill road; (b) the widening and utilization of approximately 21,500 feet of pre-existing drill road; and (c) the drilling of 191 exploration drill holes. Of this total of 53,000 feet of drill road, MJV has recontoured and reclaimed approximately 27,500 feet of drill road and recontoured and reclaimed numerous adjacent areas of pre-existing surface disturbance. The previous disturbance by MJV under past notice level operations totals 24.34 acres, of which 12.63 acres were reclaimed and 11.61 acres remain disturbed; however, the total disturbance of 24.34 acres has been incorporated into the reclamation plan described in the Midas Project POO. Combined with the proposed disturbance of 43.04 acres, the total surface disturbance for this Project would be 67.38 acres.

1.2. Purpose and Need

The intent of these exploration activities is to locate and delineate precious metal deposits within the Project areas. The proposed drilling operations are needed to evaluate the suitability of the Project areas for future mine development.

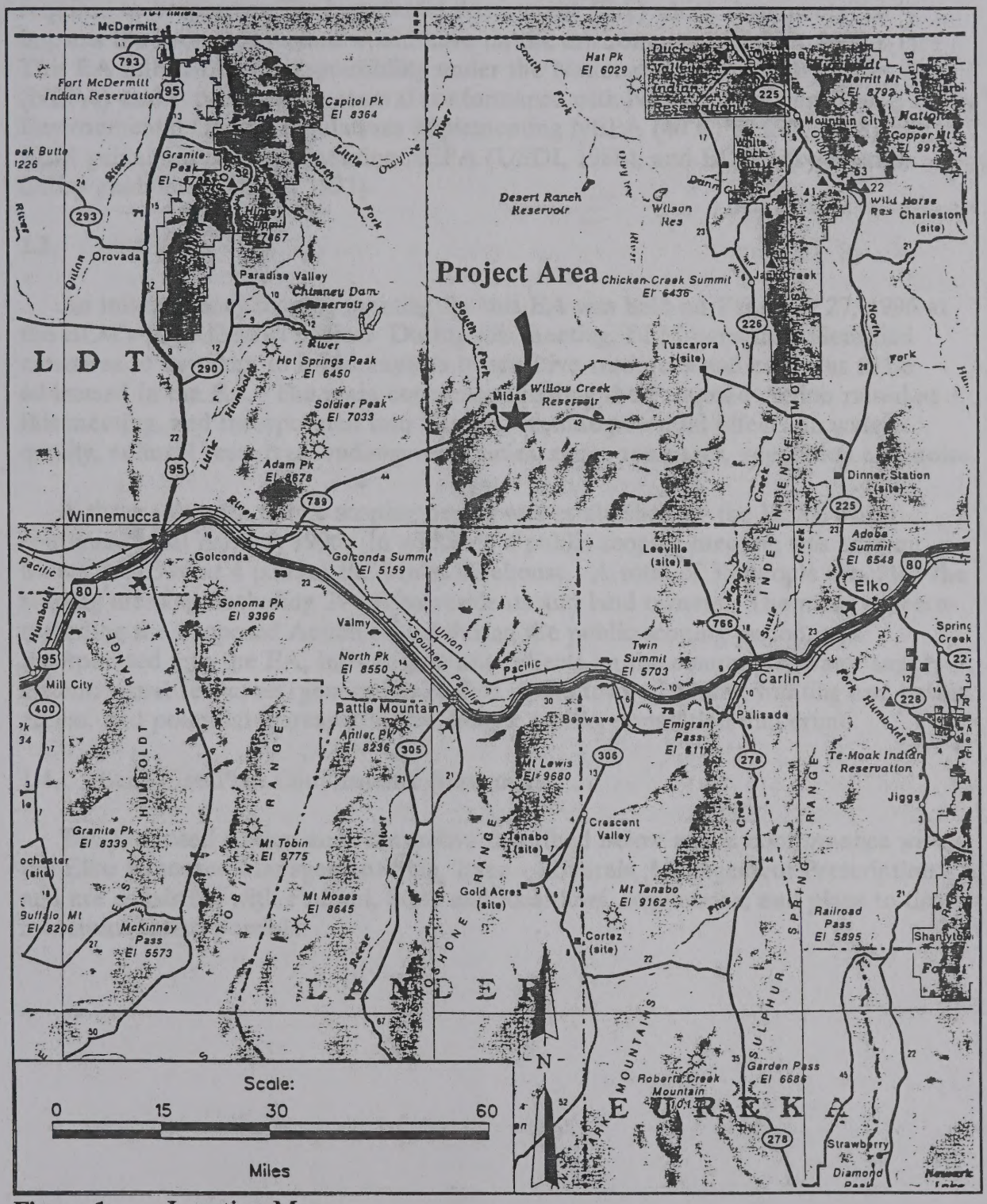


Figure 1: Location Map

In order to conduct the proposed exploration activities on public lands, MJV submitted to the BLM the Midas Project POO in accordance with BLM surface management regulations at 40 CFR 3809 detailing the Proposed Action. The BLM is required to prepare an Environmental Assessment (EA) which documents the impacts the Proposed Action would have on the environment (40 CFR 3809.2-1). This EA fulfills BLM's responsibility under the National Environmental Policy Act (NEPA) and is prepared in general conformance with NEPA, the Council of Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the BLM guidelines for implementing NEPA (USDI, 1988), and BLM Elko District Office guidelines (USDI, 1993).

1.3. Issues

An initial agency scoping meeting for this EA was held on February 27, 1996 at the BLM's Elko District Office. During this meeting, BLM personnel identified measures to be taken to avoid impacts to sensitive resources and concerns to be addressed in the EA. The main concerns regarding the Proposed Action raised at this meeting, and incorporated into this EA, include potential effects on water quality, cultural resources, endangered species, range resources, vegetation and noise.

A three (3) week public scoping period was established by the BLM, which continued until April 5, 1996. In addition, a public scoping meeting was held on March 20, 1996 at 4 p.m. at the Midas Firehouse. A total of 35 people attended the scoping meeting, including 27 Midas residents and land owners. The main concerns regarding the Proposed Action raised during the public scoping period, and incorporated into the EA, include potential effects on the community water supply system, visual resources, generation of dust in the town of Midas, hunting and public access, and potential increases in fire danger, traffic, population and crime.

1.4. Land Use Plan Conformance Statement

The Proposed Action and Alternative described below are in conformance with the Elko Resource Management Plan, Issue - Minerals, Management Prescription - 1, and are consistent with Federal, State and local laws, regulations, and plans to the maximum extent possible.

CHAPTER 2. PROPOSED ACTION AND ALTERNATIVE

MJV is the claimant and would be the operator of the proposed Midas Project. The following is the mailing address for MJV: Midas Joint Venture, Franco-Nevada Mining Corporation, Inc., Managing Joint Venturer, 6151 Lakeside Drive, Suite 2100, Reno, Nevada 89511.

2.1. Proposed Action

MJV proposes to conduct mineral exploration activities within four (4) distinct, but proximate, areas located near the town of Midas in western Elko County, Nevada (Figure 1). The Project is located on private lands leased or owned by MJV and public lands administered by the BLM, upon which MJV controls the mineral rights with lode mining claims. The relevant federal mining claims are listed in the POO which is on file with the BLM Elko District office. The Proposed Action would include the construction of approximately 17.8 miles of access road and necessary drill pads, and drilling and sampling up to 200 exploration holes. The Project would result in approximately 43.04 acres of surface disturbance, of which approximately 31.48 acres are on public lands and approximately 11.56 acres are on private lands. MJV proposes to commence operations as soon as conditions permit in the spring of 1996. The proposed Project is expected to have a duration of up to approximately two (2) years from the time of start up. Exploration activities are anticipated to occur during March through November; no construction or drilling activities are planned through the winter months. Drilling activities would generally be limited to daylight hours but may be 24 hours per day for some drill rigs.

2.1.1. Location

The Project areas are located in: Sections 8, 9, 15-17, 21, 22, 27, 28, and 34, Township 39 North, Range 46 East, Mt. Diablo Baseline and Meridian, Elko County, Nevada. The locations of Project area boundaries and regional setting are identified in Figure 2.

2.1.2. Road Construction

MJV would construct approximately 93,742 linear feet, or 17.8 miles, of new drill road, with an average road-bed width of 13 feet. The construction of any necessary drill pads would be calculated into the total acreage disturbed and correspondingly reduce the length of drill road to be constructed. This proposed disturbance is outlined in Table 1. Of the approximate 93,742 feet, about 17,512 linear feet consists of site specific re-opening of pre-existing access roads in the Elko Prince, Rex-Grande (North Portion) and Acme (Southwest Portion) Project areas. The remaining 76,230 linear feet would be constructed within the Rex-Grande (Main Portion), Dempsey and Acme (Main Portion) Project areas at locations to be determined by MJV. These roads would be constructed to avoid the four (4) identified localities of the Gold Circle Mining District site eligible for

Dempsey

Elko Prince

Rex-Grande (North Portion)

Rex-Grande
(Main Portion)

Water Well (MJV)

Acme (Southwest Portion)

Acme (Main Portion)

Water Well (MJV)

Midas
Community Well

Miners Gold Mine

Elko Prince Mine

Little Jewel Mine

Blue Bell Mine

Rex Mine

Midas Mine

Link Mine

Jackson Mine

Midas Cem

Esmeralda Mine

ESMERALDA GROUP

Midas Creek

Spring

Springs

20

21

22

27

28

29

33

34

T39N, R46E

0 1 MILE

ENVIRONMENTAL MANAGEMENT ASSOCIATES, INC.

TITLE: FIGURE 2 - Project Areas and Regional Setting

SOURCE: U.S.G.S. Topographical Map 7.5 Minute Series
Midas, Nevada and Oregon Canyon, Nevada

EXPLANATION:

- Project Area Boundaries
- Patents Not Owned by MJV and Not Part of Project Areas
- Livestock Key Area Locations
- Water Wells
- Perennial portion, Midas Creek

DATE: 3-14-96 **DRAWING NO.:** 1197-101

the National Register of Historic Places and one (1) unevaluated locality. To facilitate avoidance and protection of these localities, MJV would construct fencing prior to conducting surface disturbance. Three (3) Livestock Key Areas (areas established by the BLM to provide BLM personnel locations at which to measure forage production and utilization of the allotment) are located within the Project areas. These Livestock Key Areas would be marked with lath and flagged to protect those areas from possible inadvertent disturbance. No roads would be constructed for simple ingress to or egress from the Project areas.

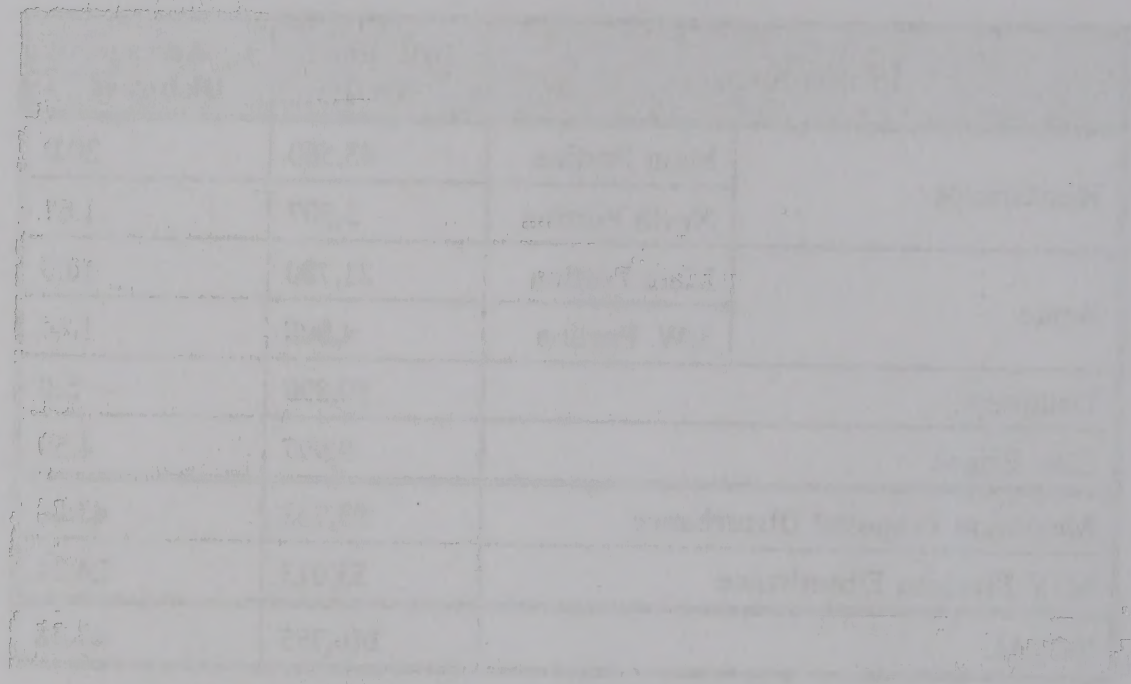
Table 1: Proposed Action Areas of Disturbance[1]

Project Areas		Drill Road (feet)	Acreage Disturbed[2]
Rex-Grande	Main Portion	43,560	20.0
	North Portion	3,507	1.61
Acme	Main Portion	21,780	10.0
	S.W. Portion	4,008	1.84
Dempsey		10,890	5.0
Elko Prince		9,997	4.59
Maximum Proposed Disturbance		**93,742**	**43.04**
MJV Previous Disturbance		53,013	24.34
TOTAL		**146,755**	**67.38**

[1] Midas Joint Venture, Plan of Operations/Application for Reclamation Permit, Midas Project, Elko County, Nevada, February, 1996.

[2] Estimate based on 13-foot average road width and calculated 20-foot disturbance. The construction of any necessary drill pads would be calculated into this acreage total and correspondingly reduce the length of drill road to be constructed.

Drill roads would be located and constructed using standard construction practices for temporary mineral exploration roads to minimize surface disturbance, erosion and visual contrast, as well as to facilitate reclamation. Road construction and dressing would be carried out with a D8-sized bulldozer equipped with dual rippers or equivalent. It is not anticipated that blasting would be necessary to construct roadbeds. Rock outcrops and areas of shallow soils would be avoided whenever possible.



Although a fire hazard potentially exists from the utilization of explosives if blasting operations are required, a fire is unlikely. MJV would take steps to prevent and, if necessary, suppress potential fires through use of up to five (5) 1,000-gallon water trucks and by ensuring that each field vehicle carries hand tools and a fire extinguisher. All field vehicles with internal combustion engines would have spark arresters installed to lessen potential fire hazard. In addition, some MJV employees are members of the Midas Fire Brigade and all employees are available to assist with fire suppression when on site.

2.1.3. Exploration Holes

MJV would drill up to 200 exploration holes under the Proposed Action. Drill holes would be vertical or angled and drilled with reverse circulation or diamond core drill rigs. All drill holes would be plugged in accordance with Nevada Administrative Code (NAC) 534.421 and 534.425, by placing drill cuttings or inorganic fill material into the total depth of the hole or, if groundwater is encountered, plugged as a well pursuant to NAC 534.420.

2.1.4. Surface Water Control

All bladed roads would not exceed a 10% grade and would be waterbarred, as needed or as recommended by the BLM, to facilitate drainage and reduce erosion.

2.1.5. Surface Disturbance

Implementation of the Proposed Action would disturb a maximum of 43.04 acres. This estimate assumes an average width of 20 feet for exploration drill roads, which includes the sidecast material excavated during road construction. The proposed disturbance includes both construction of new drill roads and re-disturbance of pre-existing access roads within the Project areas.

2.1.6. Water Use

MJV has obtained a permit from the State Engineer, Division of Water Resources for the temporary use of water from underground sources in Sections 22 and 34, T39N, R46E, located within and adjacent to the Project areas (Figure 2). The water required for exploration activities would be obtained from these sources. Project water use would amount to approximately 18,000 gallons per day (gpd) or about 2,000 gpd per drill rig. Based on pumping experience from past exploration activities, these two (2) wells should have sufficient yield to maintain the required flow rates for the life of the project.

2.1.7. Work Force

A maximum of nine (9) drill rigs are proposed to be in operation at any one time in any of the Project areas. Each drill rig would have a crew consisting of one (1) operator and one (1) or two (2) helpers. The Project would bring approximately seven (7) MJV employees and 18 to 27 contract employees into the town of Midas during periods of operation, approximately 12 months in total. Some of the MJV employees would live in the two (2) company houses, owned by MJV, located in town. Other MJV employees would commute to the Project from surrounding communities. All contract employees would commute to the Project from surrounding communities.

2.1.8. Reclamation

The reclamation of exploration roads would consist primarily of recontouring and seeding. A Cat 240 excavator or equivalent would be used to replace the cut roadbed with the sidecast downslope soil material. The excavator would then be used to flatten the berm on the upslope sides of the roads and to recontour the slope to near the original grade and roughen the surface.

Disturbed areas would be reseeded with a BLM-suggested seed mixture using a hand-held broadcast seeder. Seeding would occur during fall months. Reseeded areas would be dragged with a chain or raked to provide seed cover and enhance germination if determined necessary by BLM. Where possible, reclaimed surfaces would be left in a roughened state to facilitate moisture retention and revegetative success while minimizing potential soil erosion. The Project would be bonded to ensure that reclamation activities are completed.

2.2. Alternatives Eliminated From Consideration

The Proposed Action is for exploration drilling within the Project areas of interest outlined by MJV. Other alternatives were evaluated including alternative exploration locations, access locations, and drilling methods. Because none of these alternatives would provide a significant environmental benefit, all were eliminated from further consideration.

2.3. No-Action Alternative

The No-Action Alternative would require the BLM to reject the Proposed Action and not approve the POO. As a result, MJV would be unable to conduct exploration activities on the public land portions of the Project as outlined in the Proposed Action. Further mineral exploration activities on public lands which could result from the Proposed Action would not take place and, thus, would eliminate the possibility of the potential discovery of a precious metal resource or reserve. Implementation of the No-Action Alternative would not limit the ability of the State of Nevada to approve the planned operations on private lands.

The U.S. Department of the Interior's surface mining regulations (43 CFR 3809) and current BLM policy contain provisions allowing for mineral exploration and extraction on public lands, as long as such activities are conducted in an environmentally sound manner and do not cause unnecessary or undue degradation of the public resources. The No-Action Alternative conflicts with the General Mining Law of 1872, the Mining and Minerals Policy Act of 1970, and the Federal Land Policy and Management Act of 1976 (FLPMA). The BLM has the responsibility under FLPMA and its regulations to ensure that appropriate state and federal laws, such as the Endangered Species Act and the National Historic Preservation Act, are complied with; that the proposed operation does not cause undue or unnecessary degradation of the federal lands; and that reclamation of disturbed areas is addressed. The BLM can disapprove the proposed exploration activity only if it would violate BLM standards. The BLM is then required to describe changes in the proposed activity needed to meet those standards.

CHAPTER 3. AFFECTED ENVIRONMENT

3.1. Proposed Action

The Project is located southeast of the Owyhee Bluffs in the upper reaches of the Midas drainage and extends south into the Squaw Creek floodplain. Elevations in the area of the Project range from 5,300 to 6,850 feet above mean sea level (AMSL). Slopes range from gentle to steep and the area is generally vegetated with sagebrush and grasses.

The following critical elements of the human environment are not present or are not affected by the Proposed Action or Alternative in this EA:

- Areas of Critical Environmental Concern
- Farm Lands (prime or unique)
- Floodplains
- Paleontology
- Wastes (hazardous or solid)
- Wild and Scenic Rivers

Bureau specialists have further determined that the following resources, although present in the area of the Project, are not affected by the Proposed Action:

- Recreation

- Access: The Project is accessed from Elko by traveling north on State Route 225 for approximately 27 miles and proceeding about 25 miles west on State Route 226 to Tuscarora, and then on County Road 724 approximately 42 miles to the town of Midas. From this County-maintained road, the Acme, Rex-Grande and Elko Prince Project areas would primarily be accessed by pre-1981 access roads from the west and south through Sections 33 and 34, T39N, R46E, south of the town of Midas. Secondary access to these Project areas may be attained from pre-1981 access roads initiating in the eastern portion of Section 20, T39N, R46E, and the western portion of Section 21, T39N, R46E, south of the town of Midas. Travel through the town of Midas would only be necessary for access to the Dempsey Project area in Sections 8 and 17, T39N, R46E. The maximum speed limit through the town of Midas, for MJV and its contractor vehicles, would be 15 miles per hour for safety and dust control.

- Geology: The topography of the Midas area is characteristic of two (2) physiographic provinces: the Great Basin region of the Basin and Range physiographic province, a region characterized by a series of generally north-trending mountain ranges separated by alluvium-filled valleys; and an area of moderate elevation and low relief that is part of the Owyhee Upland south of the Snake River Plain of Idaho. The Project is located on the northwestern boundary of the Midas

Trough, a late Cenozoic age northeast-southwest striking graben which forms the south-facing Owyhee Bluffs.

The rocks of the area of the Project are comprised of volcanic flows, tuffs, and vent plugs or domes, which occur as two (2) lithologically and stratigraphically distinct groups but are, in part, chemically similar. The composition of both groups range from basalt/gabbro to rhyolite/latite. Felsic ashflow tuffs are dominant in both groups but especially in the younger. The older group, the Midas Sequence, is believed to be 17-15 million years (m.y.) in age, and consists of felsic ashflow tuffs interlayered with and intruded by basaltic flows and gabbroic dikes and sills. The younger group, the Snowstorm Sequence, is 15-9 m.y. in age. The two (2) groups are separated by a third group, the Esmeralda Sequence, of felsic air fall tuffs interlayered with epiclastic sedimentary and fine-grained clastic rocks.

Gold and silver mineralization at Midas occurs in veins and breccia zones accompanied by quartz, adularia and calcite, with lesser amounts of fluorite, clays kaolinite/sericite and pyrite also related. Pyrite is pervasive in the rocks of the district and appears not to be related to precious metal mineralization. Ore mineralogy consists predominantly of gold, electrum and associated marcasite, pyrite, pyrrhotite, chalcopyrite, galena and sphalerite, with the latter minerals being minor but widespread. Geochemically, the mineralized rocks contains very minor amounts of silver (15.89 ppm), arsenic (22.8 ppm), copper (2.8 ppm), mercury (0.08 ppm), lead (3.5 ppm), antimony (2.0 ppm), zinc (25.5 ppm) and cadmium (0.7 ppm).

Late Tertiary and Quaternary age deposits cover the lower elevations surrounding the area of the Project. The Tertiary age deposits include tuffs and gravels and the Quaternary age sediments consist of older alluvium boulder gravel and sand deposits on high-level stream terraces, alluvial fans, and alluvium deposits of silt, sand, and gravel along present streams (Coats, 1987).

Seismicity in the vicinity of the Project is low. During the period from 1868 to 1972, nine (9) earthquakes were detected within a 50-mile radius of the Project. Of these, five (5) earthquakes had a magnitude between 4.0 and 4.9 and four (4) earthquakes had a magnitude between 5.0 and 5.9 on the open-ended Richter scale (Husband, 1975).

- Wild Horses: The Project is located between two (2) wild horse Herd Areas (HAs), the Rock Creek HA and the Little Humboldt HA. The extreme southeastern portion of the Acme Project area extends into the Rock Creek HA in Section 34, T39N, R46E. The Rock Creek HA supports a herd population of approximately 813 horses over 180,677 acres. However, no horses have been spotted near this area of the Project. Although the Project does not lie within the Little Humboldt HA, some horses have been spotted near Thousand Springs (Oregon Canyon) in Section 5, T39N, R46E, north of the Dempsey Project area (McKinstry, 1996).

• Land Use and Status: Land use within and around the area of the Project consists of livestock grazing, mineral exploration and development, and public recreational use. The area of the Project is zoned by Elko County for open space and provides for a wide variety of rural land uses. Mining exploration is a land use consistent with current zoning. Project activities would not restrict public access within the area of the Project or through Midas Canyon.

• Wilderness: The nearest designated wilderness area to the Project is the Santa Rosa Wilderness located approximately 50 miles northwest. There are currently 102 units of public land managed by the BLM in Nevada which are classified as Wilderness Study Areas (WSAs). The BLM has conducted studies for each WSA to recommend to the Secretary of the Interior which WSAs are suitable or unsuitable for inclusion in the National Wilderness Preservation System. The WSA closest to the area of the Project is the Little Humboldt River WSA, approximately 0.8 mile north of the Dempsey Project area (USDI, 1992). About 70 percent of the Little Humboldt WSA has been recommended as suitable for wilderness designation (USDI, 1987). The entire WSA is managed to prevent impairment of the wilderness values and will continue to be administered under the Interim Management Policy (1995) until Congressional action is taken.

3.1.1. Soils

Soils in the area of the Project are typical of mountain slopes. Slopes are gentle to steep and runoff is medium to rapid. Erosion potential by water is moderate to high, and erosion potential by wind is slight. Soils consist of cobbly and very cobbly loams, gravelly and very gravelly loams, rock outcrops and rubble. The soil associations underlying the majority of the area of the Project are the Bregar, moderately steep-Bregar-Carstump Association and the Alyan, steep-Bregar-Alyan Association. Soil characteristics for soil series occurring in two different map units are different, because of varying slope and aspect. The characteristics of the soil series comprising the soil associations underlying the majority of the area of the Project are outlined in Table 2. As illustrated in Table 2, a major limitation for seeding suitability is soil depth. These soils are rated fair to poor for seeding because they are arid, droughty, and have a high volume of coarse fragments on the surface.

Table 2: Soil Series Within Area of Project

Soil Series	Range in Depth to Bedrock	Profile Soil Texture	Permeability	Runoff	Erosion Hazard by Water	Erosion Hazard by Wind
Alyan	20-40"	Loam to clay, gravelly to very gravelly	Slow	Medium to rapid	High	Slight
Bregar	5-12"	Loam to clay loam, very gravelly	Moderately slow	Medium to rapid	Moderate	Slight
Carstump	20-40"	Loam to clay, very cobbly	Slow	Rapid	High	Slight

Source: USDA, unpublished.

3.1.2. Air Quality

The Project is located within hydrographic basin No. 63, which is also the number used by the Nevada Division of Environmental Protection (NDEP) to designate the air basin. NDEP monitoring to determine the attainment or nonattainment status of this basin has not been conducted and, as such, this basin is considered "unclassified." The air quality of the area of the Project is considered good due to the limited population of the area, the absence of concentrated industrial activity and the lack of natural pollution sources. Suspended particulate matter (PM-10) is the main pollutant of concern and high winds or increased surface disturbance can contribute to elevated PM-10 concentrations. A major source of particulate emissions and dust in and around the Project is vehicular traffic on unpaved roads. No data are available regarding the existing levels of fugitive dust in the area of the Project; however, fugitive dust levels are presumed to be limited because of the lack of emissions sources.

3.1.3. Water Resources

There are several springs located within the area of the Project. Analysis of the Elko County geologic map indicates that these springs appears to be controlled by faulting. The only perennial drainage is the portion of Midas Creek located in the west ½, Section 9, northwest ¼, Section 16 and the northeast ¼, Section 17, T39N, R46E. Midas Creek flows south between the Dempsey and Elko Prince Project areas. None of the proposed activities associated with the Project would be conducted within or immediately adjacent to the springs or Midas Creek.

Based on surface drainage patterns, the anticipated groundwater flow direction is to the south/southeast. This flow direction (gradient) is supported by the approximate water table elevations in the Midas water supply well, water levels from exploration drill holes at the location of the new MJV water well in Section

22, T39N, R46E, and the existing MJV water well in Section 34, T39N, R46E. Water table elevations in these wells are 5,740 feet, 5,720 feet and 5,230 feet, respectively.

The municipal drinking water supply for the town of Midas is a groundwater well located in Section 17, T39N, R46E. The elevation of the wellhead is 5,860 feet, and the depth to water is approximately 120 feet. Production history for the well has been erratic, with production capability decreasing during the dry season. The municipal water supply system consists of a storage tank at the wellhead and pipeline extending south through Midas Canyon from the tank to the town. The water pipeline is shallowly buried below the surface adjacent to the Midas Canyon Road between the wellhead and Midas in Sections 17 and 20, T39N, R46E and, at some locations, crosses under the road. A Wellhead Protection Area (WHPA), as defined under the Safe Drinking Water Act Amendments, has not been established.

3.1.4. Wetlands/Riparian Zones

There are no known wetlands occurring in the area of the Project. There is some riparian zone habitat along the perennial portion of Midas Creek which flows through Sections 9, 16 and 17, T39N, R46E, between the Dempsey and Elko Prince Project areas.

3.1.5. Biological Resources

3.1.5.1. Vegetation

The Project is located at elevations between 5,300 and 6,850 feet AMSL, principally within a homogeneous sagebrush steppe community, with narrow corridors of riparian vegetation along drainages. A list of vegetation species identified during the cultural resource inventory field survey is attached as Appendix A.

The well-drained, deeper soils of the area of the Project support tall sagebrush, while rocky soils are dominated by low sagebrush. Grasses, consisting primarily of Sandberg's bluegrass, grow interspersed among the sagebrush. Cheat grass, peppergrass and black mustard are dominant in areas of ground disturbance by either mining or ranching activities. Buckwheat, western serviceberry and desert thorn provide edible seeds for wildlife. Herbaceous forbs including native wild onion and balsamroot are valued food sources for wildlife and are found at elevations above 6,000 feet AMSL.

3.1.5.2. Threatened, Endangered, and Sensitive Plant Species

Consultation with the Nevada Natural Heritage Program revealed no records of threatened, endangered, rare or sensitive plant species in the area (Cooper, 1996) (Appendix B).

3.1.5.3. Wildlife Resources

Wildlife species inhabiting the area in and around the Project are typical of low mountains and foothills in the Great Basin. Adequate cover, year-round forage and a diversity of habitat types exist, but permanent water is a limiting feature of the area as it is of much of Nevada.

Mammals typical of the area include mule deer, coyote, jackrabbit, mountain cottontail, rattlesnake and various rodents. The area including the Project is designated by BLM as "other yearlong range" for mule deer and is not considered crucial seasonal habitat. A bighorn sheep use area is located approximately 3 miles west of the Project along the Owyhee Bluffs.

The area of the Project lacks nesting habitat for golden eagles or redtail hawks which prefer the cliff habitat of the nearby Owyhee Bluffs. Swainson's hawks may occur in the area of the Project (Erickson, 1996). Actual raptor population counts or confirmation of raptor sightings within the area of the Project are unavailable.

Game birds are limited in the area but may include sage grouse and chukar (Erickson, 1996). Sage grouse strutting grounds have been documented in Sections 4, 8 and 32, T39N, R46E. The strutting ground nearest to the Project is located in the southeast ¼ of the northwest ¼, Section 8, T39N, R46E, slightly northwest of the Dempsey Project area.

3.1.5.4. Threatened, Endangered, and Sensitive Wildlife Species

Consultation with the Nevada Natural Heritage Program revealed the occurrence of Townsend's big-eared bat (*Plecotus townsendii*), a BLM-designated State Sensitive Species, in the area of the Project. This species has been recorded in the Northwest ¼, Section 16, T39N, R46E. (Cooper, 1996) (Appendix B). No other listed or BLM-designated sensitive wildlife species were identified in the area of the Project.

3.1.6. Cultural Resources

3.1.6.1. Prehistory and History

The Project is situated in the extreme northwestern portion of the traditional ethnographic territory of the Western Shoshone, slightly north of

the area attributed by Steward to the Tosawihi ('White Knives') Shoshone. Recent data indicate that the Tosawihi Shoshone spent their winters in small camps along the Humboldt River near Battle Mountain, approximately 40 miles south of the town of Midas. During dry months, the Tosawihi engaged in subsistence activities, travelling great distances to forage for pinyon nuts near Austin and salmon in the Snake River before returning to Battle Mountain for tribal festivals. According to Steward (1938) the Tosawihi frequented the hills above Rock Creek to collect the opalite toolstone for which the group is named (Ataman, et al., 1995).

The Tosawihi shared a boundary with the Northern Paiute and, by most accounts, had friendly relations. The Northern Paiute likely visited the area of the Project and the opalite quarries. Because both tribes used technologically and stylistically similar tools, it is difficult to distinguish between the two on the basis of the archaeological record.

Prior to gold discovery in the Midas area, there was little Euro-American settlement. Most activity between 1828 and 1860 was located in the Humboldt River Valley and included fur trapping, emigration and railroad construction. A stage line between Paradise Valley and Cornucopia (and later Tuscarora) operated in 1875 and passed 15 miles north of Midas. The Nevada Land and Cattle Company, Ltd. began livestock raising in 1881 in Squaw Valley along Willow and Rock Creeks.

Following the discovery of gold ore in the summer of 1907, a rush the next spring created the town of Midas which reached a population high of 2,000 (Lincoln, 1982). The Elko Prince mine, which became the largest in the district, was built in 1907. Small mills were built in the area after 1908; however, production did not substantially increase until 1915 when a 75-ton capacity cyanide mill was built at Elko Prince (Ataman, et al., 1995). Gold, silver and some copper were mined in the district. Between 1908 and 1920, the district produced slightly over $2 million (actual dollars) (Tingley, et al., 1993).

3.1.6.2. Cultural Resources Inventory

A Class II Cultural Resources Inventory was conducted on 602 acres of public lands within the exploration areas referred to as Rex-Grande (Main Portion)(268 acres), Acme (Main Portion)(171 acres) and Dempsey (163 acres) in October, 1995 (Ataman, et al., 1995). The survey did not cover the Rex-Grande (North Portion), Acme (Southwest Portion) and Elko Prince Project areas because MJV would utilize existing roads and/or re-open pre-existing access roads to conduct exploration in these areas. Seven (7) new prehistoric sites and two (2) historic sites were discovered within the surveyed Project areas. One (1) of these historic sites, the Gold Circle Mining District,

is determined eligible for nomination to the National Register of Historic Places under criteria "a" and "d".

The Gold Circle Mining District encompasses approximately 3,000 acres, in an arc north and east of the town of Midas. This inventory examined about 20 percent of the district. Twenty-six (26) localities were recorded within the surveyed portion of the site. Of these locations within the Gold Circle Mining District site, the survey identified four (4) localities as contributing elements to the National Register value of the district. In addition, one (1) locality remains unevaluated and is potentially a contributing element.

3.1.7. Native American Religious Concerns

Consultation with the Western Shoshone is in progress and no specific information concerning traditional issues is available. In general, traditional Shoshone people hold all the land to be sacred and are concerned with activities that disturb the earth's surface or affect water sources. Some locations possess special significance, and play a continuing role in traditional religion and maintenance of ethnic identity.

3.1.8. Visual Resources

The landscape of the area consists of a steep, complex terrain of hills and ridges. Soil colors consist of browns, tans and grays, but are generally obstructed by the overlying vegetation. Dominant vegetation colors are greens, grays, yellows and tans.

The Dempsey Project area is located in a Class III Visual Resource Management (VRM) area. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

The remaining Project areas (Elko Prince, Rex-Grande and Acme) are located in a Class IV VRM. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements(USDI, 1986b).

3.1.9. Noise

The proposed Project is located in a sparsely populated rural area. The town of Midas is located approximately 1,400 feet southwest of the nearest Project area boundary (Elko Prince). However, the nearest construction and drilling operations are expected to occur in the Rex-Grande Project area, located over a ridge approximately 1 mile east of the town of Midas. Existing noise levels are generally low, but increase during periods of high winds. Some man-made sources of noise in and/or around the Project include off-road vehicle activity. Ambient noise level measurements for the area of the Project are not available.

3.1.10. Range Resources

The Project is located within portions of two (2) grazing allotments, Midas and Squaw Valley. The Project areas are located primarily within the Midas Allotment which is an "M" category with a #43 priority in the Resource Area; a small portion of the Acme Project area is located within the Squaw Valley Allotment which is an "I" category with a #13 priority in the Resource Area (USDI, 1987).

The "M" category designates that the Midas Allotment is managed by the BLM to maintain current satisfactory conditions. The "I" category indicates that the Squaw Valley Allotment is actively managed by BLM for improvements (USDI, 1987). The Midas Allotment is held by Kenneth R. Buckingham and the Squaw Valley Allotment is held by the Ellison Ranching Company. Both allotments support cow-calf operations during summer and fall grazing. The forage production rate of the land in the Midas Allotment is approximately six (6) acres per animal unit month (AUM), which means that six (6) acres are required to support one (1) cow and one (1) calf for one (1) month. The forage production rate in the Squaw Valley Allotment is approximately ten (10) acres per AUM. Active grazing preferences in the Midas and Squaw Valley allotments are 711 and 26,796 AUMs, respectively.

Livestock Key Areas have been established by the BLM to provide BLM personnel locations at which to measure forage production and utilization of the allotment. Of four (4) Livestock Key Areas located within the Midas Allotment, three (3) are located within Project areas. Area 2 is located in the Dempsey Project area; Area 3 is located in the Elko Prince Project area; and Area 4 is located in the Acme (Main Portion) Project area (see Figure 2).

3.1.11. Socioeconomics

The town of Midas has approximately 12 year-round residents. The town experiences an influx of seasonal residents during the summer, when population increases to about 75. There is one (1) commercial business, a bar, located within

the town. Community services include a volunteer fire department, a drinking water supply system and telephone service.

3.2. No-Action Alternative

The description of the affected environment for the No-Action Alternative would be the same as that for the Proposed Action.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1. Proposed Action

4.1.1. Soils

The construction of drill roads would disturb up to 43.04 acres of soils, with 31.48 acres on public lands. Wind and water erosion would increase where soils are disturbed until reclamation was successfully completed. Soil loss to wind erosion would amount to approximately 12 tons/year, based on EPA AP-42 emissions factor for wind erosion. The soil loss tolerance factor (or T factor) for the three (3) soils ranges from the minimum of 1 ton/acre (Bregar) to 2 tons/acre (Alyan and Carstump). The soil series affected have only slight wind erosion potential.

Soil series occurring within the area of the Project have moderate to high ratings for water erosion potential. This potential hazard would be reduced by measures incorporated in the Project design including 10% or lower grades for constructed roads and use of waterbars (see Section 2.1.3, 2.1.4). The impacts of the Project on soils would be minimal.

4.1.2. Air Quality

Soil loss erosion cause by surface disturbance (12 tons/year) and dust caused by travel on dirt roads within the area of the Project would have a slight impact to air quality. To control dust, the maximum speed limit through the town of Midas and on Project area roads, for MJV and its contractor vehicles, would be 15 miles per hour. The impacts of the Project on air quality would be minimal.

4.1.3. Water Resources

Exploration drilling would remove only small samples of rock and would not change the characteristics of the rock units or groundwater. All drill holes would be plugged pursuant State of Nevada regulations to protect groundwater resources. Only water or non-toxic drilling fluids would be utilized, as necessary, during drilling operations. As discussed above, the rock units to be sampled do not contain large amounts of toxic metals. Natural leaching of metals in the earth's crust to groundwater does occur. Nevada Administrative Code 534.420, 534.421 and 534.425 were specifically enacted to neutralize any change in the natural leaching of metals due to the completion of exploration drill holes. Because all MJV exploration drill holes would be plugged in accordance with the Nevada Administrative Code, the impacts of the Project on water quality would be minimal.

To meet project water needs, MJV would be withdrawing 18,000 gpd from two (2) water wells in Sections 22 and 34, T39N, R46E (Figure 2). The existing

municipal well is located in Section 17, T39N, R46E, approximately 9,800 feet west of the nearest MJV well in Section 22, T39N, R46E. Based on water table elevation information, the two (2) MJV wells are located down gradient and/or slightly cross gradient from the municipal well. Given the distance between the wells and the limited temporary nature of the MJV pumping, it is anticipated that the impacts of the Project on water quantity would be minimal.

To avoid potential mechanical effects on the water supply system, such as pipe breakage, MJV should not store any equipment adjacent to the community well site.

4.1.4. Wetlands/Riparian Zones

Surface erosion which may be caused by exploration road construction within Project areas located in the Midas Canyon drainage (Dempsey and Elko Prince) is not expected to have an impact on riparian zone vegetation along the perennial portion of Midas Creek. The amount of disturbance in the Midas Canyon drainage would be limited and is located at a far enough distance from Midas Creek so as to not cause sediment loading. The impacts of the Project on wetlands/riparian zones would be minimal.

4.1.5. Biological Resources

4.1.5.1. Vegetation

Exploration road and drill pad construction would temporarily disturb vegetation in the sagebrush steppe community. This type of habitat is abundant in the Project vicinity and would be reclaimed using BLM-recommended plant species. Timely reclamation would reduce the spread of noxious weeds over the disturbed area; however, if the BLM identifies a noxious weed problem, Fairway crested wheatgrass would be added to the seed mix during reclamation to compete with invader species. Sumps should not be constructed except as to avoid sedimentation to perennial streams. The impacts of the Project on vegetation would be minimal.

4.1.5.2. Threatened, Endangered, and Sensitive Plant Species

No impacts to any federally listed or sensitive plant species would occur.

4.1.5.3. Wildlife Resources

The Proposed Action would have minimal direct impact on wildlife species. Up to 43.04 acres of existing wildlife habitat would be temporarily impacted by road construction. However, no long-term impacts are likely to occur since reclamation and reestablishment of shrub species would likely take place within several years of project completion. Although some sage grouse

strutting grounds have been identified in the vicinity of the Project, none occur within the Project areas. Construction of roads and the operation of drilling equipment may disturb wildlife by creating noise, dust and human presence. Because MJV would not allow employees to carry firearms or hunt on the Project property during work hours, there should be little to no impact to wildlife from increased hunting pressure. The impacts of the Project on wildlife would be minimal.

4.1.5.4. Threatened, Endangered, and Sensitive Wildlife Species

Townsend's big-eared bats have been recorded in the vicinity of the Elko Prince Project area. Noise created by road construction and drilling operations may temporarily interrupt bat foraging activities in the area. Through avoidance of shafts, adits and riparian foraging areas, the Proposed Action would result in no appreciable impacts to Townsend's big-eared bats.

4.1.6. Cultural Resources

Protection of identified cultural resources eligible for the National Register of Historic Places has been incorporated in the Proposed Action (see Section 2.1.2.) Prior to commencing operations, MJV would construct fencing around each of the four (4) eligible localities and one (1) unevaluated locality of the Gold Circle Mining District site to ensure that these localities are not affected by exploration operations. The type of fencing used would be consistent with BLM recommendations. The impacts of the Project on cultural resources would be minimal.

4.1.7. Native American Religious Concerns

Because no specific information concerning traditional issues is available, no impacts to Native American Religious Concerns has been identified. If through Native American consultation traditional issues are identified, the BLM should address those issues.

4.1.8. Visual Resources

The Proposed Action would result in short-term visual impacts principally affecting the visual elements of line and color. Horizontal and shallow diagonal lines of drill roads would cause moderate, temporary line contrasts with the natural landscape. Disturbance of vegetation resulting from road construction would cause moderate, temporary color contrasts. With successful reclamation of exploration roads and revegetation, long-term visual impacts would be minimized. The effects of the Project on visual resources would be consistent with BLM-prescribed Class III and IV VRM objectives.

4.1.9. Noise

The noise generated by the Proposed Action would be typical of most construction and mining projects and could be intense for short intervals. Road construction and drilling can generate noise levels up to 95 dBA at 25 feet. For every doubling of distance from a noise source, there is a six (6) dBA decrease in noise level. Based on this rate of noise attenuation, as well as attenuating factors such as topography, wind, and atmospheric absorption of sound, it is expected that noise associated with the Project would have no appreciable impacts on the nearest sensitive noise receptors in the town of Midas.

Noise-sensitive wildlife species would be expected to avoid the area of the Project temporarily, but would likely return when noise generating activities ceased. The noise impacts of the Project will be minimal.

4.1.10. Range Resources

Road construction could occur completely within the Midas Allotment and would result in a temporary loss of 43.04 acres or about 7.2 AUMs of cattle forage. The extreme southeastern portion of the Acme Project area lies within the Squaw Valley Allotment. If all of the Acme (Main Portion) proposed disturbance were to occur in the Squaw Valley Allotment, approximately ten (10) acres or 1.7 AUMs would be temporarily lost to grazing. Under this scenario, 33.04 acres or about 5.5 AUMs would be temporarily lost in the Midas Allotment. No other impacts on range resources are expected. Disturbed areas would be reclaimed using BLM-recommended plant species.

Protection of the three (3) Livestock Key Areas located in the Dempsey, Elko Prince and Acme (Main Portion) Project areas has been incorporated in the Proposed Action (see Section 2.1.2). MJV would, at the direction of the BLM, mark with lath and flag the Livestock Key Areas to protect them from possible inadvertent disturbance.

4.1.11. Socioeconomics

The presence of MJV and contract employees in the town of Midas may cause temporary impacts to the community including: increased traffic; a minor increased use of septic systems and water supply system; and increased business patronage. The impacts of the Project on socioeconomics would be minimal.

4.2. No-Action Alternative

Implementation of the No-Action Alternative would result in the avoidance of all the identified, project-specific resource conflicts resulting from activities on public lands.

4.3. Cumulative Impacts

All resource values within the area of the Project have been evaluated for cumulative impacts. It has been determined that cumulative impacts would be negligible as a result of the Proposed Action or Alternative.

4.4. Monitoring

Site monitoring for stability and revegetation success would be conducted by a consultant twice a year, during the spring and fall, for three (3) years. Monitoring during site inspections would include a visual evaluation of successful establishment of desirable species; vegetation reproduction processes; site stability; and attainment of the revegetation goal. The consultant would submit reports to the BLM.

BLM monitoring would consist of a BLM specialist conducting periodic compliance inspections of the affected Project areas. All compliance inspections would be documented into the Project file at the BLM Elko District Office.

CHAPTER 5. CONSULTATION AND COORDINATION

5.1. List of Preparers

This Environmental Assessment (EA) was prepared by Environmental Management Associates, Inc. (EMA), under a contract with MJV, and at the direction of the Bureau of Land Management, Elko District, Elko, Nevada. The following is a list of individuals responsible for preparation of the EA.

Environmental Management Associates, Inc.

Richard F. DeLong, Project Manager
Dr. Terry R. Thomas, Principal
Christina Lovato, Environmental Specialist
Kent Samuelson, Geologist

U.S. Department of the Interior-Bureau of Land Management, Elko District Office:

Roger Congdon - Project Lead
Nick Rieger - Geology, Minerals, Hazardous Materials
Kathy McKinstry - Wild Horses
Gary Back - Wildlife, T&E Species (plant and animal)
Tim Murphy - Cultural Resources, Paleontology
Mike Jensen - Range
Evelyn Treiman - Environmental Coordinator, Recreation, Wilderness, Visual Resources
Carol Marchio - Soils, Water Resources

5.2. Persons, Groups and Agencies Consulted

The following individuals, organizations, and agency representatives were contacted during the preparation of this assessment. Where appropriate, specific communications are identified as a reference (see Chapter 6, References).

Midas Joint Venture

Andre Douchane
Ken Snyder

Public Agencies

Federal Agencies:

U.S. Department of Agriculture
Natural Resource Conservation Service, Elko District Office:
Paul Blackburn

State Agencies:

Nevada Department of Conservation and Natural Resources
Division of Wildlife, Elko, Nevada:
Dwayne Erickson
Division of Environmental Protection, Bureau of Air Quality:
Steve Hoelscher
Division of State Parks:
Linda Eiseman

Local Agencies:

Elko County, Planning and Public Works Department:
Carl Kennison

Elko County Zoning Enforcement
John Kingwell

Other Organizations

Nevada Natural Heritage Program:
Kevin Cooper

CHAPTER 6. REFERENCES

Ataman, K., S. Stornetta, J. Carter and D. Dugas, 1995: Inside the Gold Circle: An Archaeological Inventory Near Midas, Nevada.

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____, 1992: State of Nevada Wilderness Status Map, Bureau of Land Management.

____, 1993: NEPA Guidebook, Bureau of Land Management, Elko District.

APPENDIX A

PLANT SPECIES OBSERVED IN THE AREA OF THE MIDAS PROJECT

PLANT SPECIES OBSERVED IN AREA OF MIDAS PROJECT
(October, 1995)[1]

Common Name	Scientific Name (Genus-species)
Tall sagebrush	Artemisia tridentata
Low sagebrush	A. arbuscula
Sandberg bluegrass	Poa sandbergii
Cheat grass	Bromus tectorum
Great Basin wildrye	Elymus cinerus
Squirreltail	Sitanion hystrix
Indian ricegrass	Oryzopsis hymenoides
Needlegrass	Stipa sp.
Snakeweed	Gutierrezia sarothrae
Prickly phlox	Leptodactlon pungens
Rubber rabbitbrush	Chrysothamnus nauseosus
Bitterbrush	Purshia tridentata
Buckwheat	Eriogonum sp.
Western serviceberry	Amelancier alnifolia
Desert thorn	Lycium sp.
Wild onion	Allium sp.
Balsamroot	Balsamorhiza sp.
Peppergrass	Lepidium perfoliatum
Black mustard	Brassica nigra
Quaking aspen	Populus tremuloides
Willow	Salix sp.
Wild rose	Rosa woodsii
Chokecherry	Prunus virginiana
Currant	Ribes sp.
Ocean spray	Holodiscus dumosus
Dock	Rumex crispus
Stinging nettle	Urtica urens
Mugwort	Artemisia douglasiana

[1] Ataman, K., S. Stornetta, J. Carter and D. Dugas, 1995: Inside the Gold Circle: An Archaeological Inventory Near Midas, Nevada.

APPENDIX B

CORRESPONDENCE WITH THE NEVADA NATURAL HERITAGE PROGRAM

Nevada Natural Heritage Program

1550 East College Parkway, Suite 145
Carson City, Nevada 89710
(702) 687-4245

RECEIVED
FEB 13 1996
EMA, INC. - RENO

9 February 1996

Christina Lovato
Environmental Management Assoc
100 W Grove St Suite 100
Reno NV 89509

Dear Christina:

We are happy to comply with your request for information on the sensitive plant and animal species on or near the Midas project area. We searched our data base and maps for the following:

Township 39N Range 46E Section all

Sensitive species that are known to occur on or near the project area are listed on the enclosed printout. Various raptors may also occur throughout the project area. For more complete information on raptors, please contact Gary Herron, Nevada Div. of Wildlife, at (702) 688-1500. Please note that all cactuses, yuccas, and Christmas trees are protected by Nevada state law (NRS 527.060-.120), including species not tracked by this office.

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

For more specific habitat information on the species, you may contact our Zoologist, Glenn Clemmer, or our Botanist, Jim Morefield at (702) 687-4245.

Thank you for checking with our program. If we can be of further assistance please give us a call.

Sincerely,

Kevin Cooper
Data Manager

SENSITIVE PLANT AND ANIMAL SPECIES ON OR NEAR THE MIDAS PROJECT AREA
Compiled by the Nevada Natural Heritage Program
9 February 1996

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	NNNPS STATUS	PREC	TOWNSHIP RANGE	SECTION	LAT	LONG	LAST OBSERVED
Plecotus townsendii ssp	TOWNSEND'S BIG-EARED BAT	C2			S	039N046E	16	411543N	1164739W	1992-05-31

PREC:

Precision, or radius of uncertainty around latitude/longitude coordinates:

S = Seconds: within a three-second radius.
M = Minute: within one minute radius, approximately 2 km or 1.5 miles.
G = General: within about 8 km or 5 miles, or to map quadrangle or place name precision only.
U = Unmappable.

STATE STATUS:

Fauna: State protection under NRS 501.331, NRS 501.337, NRS 501.375, NRS 501.386. (Yes /No)
Flora: State protection under NRS 527
CE: Critically endangered
CY: Cactus and Yucca Law
#: Recommended for critically endangered, pending formal listing

NNNPS STATUS:

Northern Nevada Native Plant Society Sensitive Species List:

PE - Possibly extinct
W - Watch
D - Deleted
E - Endangered
T - Threatened

FEDERAL STATUS:

The standard abbreviations for federal endangerment status as published in the Federal Register by the USFWS, Office of Endangered Species. The status for candidates and their meanings are discussed in each Federal Register notice. The following are the standard USFWS abbreviations that pertain to the project area.

C2 = Candidate, category 2

BLM Library
Denver Federal Center
Bldg. 50, OC-521
P.O. Box 25047
Denver, CO 80225